United States Patent [19]

Wong

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[54] **BLOOD SUBSTITUTE BASED ON HEMOGLOBIN**

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[30] **Foreign Application Priority Data**

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[58] **Field of Search** ..... 260/112.5 R, 112 R, 260/112 B; 424/177

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,925,344	12/1975	Mazur	260/112.5 R
4,001,200	1/1977	Bonsen et al.	260/112.5 R
4,001,401	1/1977	Bonsen et al.	424/177

FOREIGN PATENT DOCUMENTS

736,354	9/1955	United Kingdom.
1,126,628	9/1968	United Kingdom.

OTHER PUBLICATIONS

Foerster et al., *Chemical Abstracts, vol. 82:11,061q, (1975).*

Kaplan et al., *Chemical Abstracts, vol. 83:53,540w, (1975).*

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[57] **ABSTRACT**

A blood substitute or blood extender is prepared by chemically coupling hemoglobin with a polysaccharide material selected from dextran and hydroxyethyl starch, and having a molecular weight of from about 5,000 to about 2,000,000, to form a covalently bonded chemical complex. The complex has similar oxygen transporting abilities to hemoglobin, and has a much lower rate of renal excretion.

14 Claims, 1 Drawing Figure